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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/820,477 | 03/28/2001 | Jesse Sandoval | 99-413 1496.00062 | 5326 |

24319 7590 03/09/2005

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| EXAMINER |
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LEVITAN, DMITRY

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| ART UNIT | PAPER NUMBER |
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2662

DATE MAILED: 03/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/820,477

Applicant(s) **u**

SANDOVAL, JESSE

Examiner

Dmitry Levitan

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 2, 4-12 and 14-22 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 4-12, 14-22 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

Amendment, filed 02/25/05 has been entered. Claims 1, 2, 4-12, 14-22 remain pending.

Claim Rejections - 35 USC § 112

In light of the Applicant's remarks, the rejection of claims 7 and 8 under 35 USC § 112 is withdrawn.

Claim Rejections - 35 USC § 102

1. Claims 1, 2, 4, 9, 11, 12, 14, 16, 17, 20, are rejected under 35 U.S.C. 102(e) as being anticipated by Lyon (US 6,333,917).

2. Regarding claims 1, 2, 4, 11, 12, 14 and 17, Lyon teaches a circuit and a method comprising:

A buffer for storing data packets (queue fill buffer 36 on Fig. 3 and 3:45-55); and

A test circuit (DROP/TAG 40 and RED ENGINE 38 on Fig. 3 and 6:24-27) configured to

a) monitor a number of packets in the buffer (RED engine is monitoring the queue fill 6:19-26),

b) receive an additional packet to said plurality of data packets (packets from sources 32 6:19-23),

c) store said additional data packet into said buffer, if the number of packets in the buffer less than a first threshold (storing unmarked packets 6:25-27 when the queue size is less than a minimum threshold 1:50-67 and 2:1-4),

c) discard additional data packet in accordance with a probabilistic test responsive to said number being greater than the first threshold (probabilistic test 2:4:20 and packet discard 6:26-27).

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d) present an identification signal to a sender of said additional data packet identifying said additional data packet as discarded (implicit signal to the source of the discarded packet to slow down 8:48-59).

In addition, regarding claims 2, 11, 12 and 17, Lyon teaches method and means for discarding the packets without storing said additional data packets in said buffer (packets are dropped in drop/tag section 40 before reaching the buffer 36 Fig. 3 and 6:25-28) when the queue size exceeds the maximum threshold (marking all the packets 2:1-4 and discarding them).

Lyon teaches RED+ dropping/tagging on enqueue 7:42-52 and discarding the marked packet 8:48-59.

3. Regarding claims 9, 16 and 20, Lyon teaches to monitor an average number of packets in the buffer (monitor average size of the queue 1:56-58) and determine the number of packets before permitting additional packet to the buffer (inherently part of the system, because the result of the queue monitoring is dropping/tagging packets is done before permitting new packet to the queue 6:23-28).

Claim Rejections - 35 USC § 103

4. Claims 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lyon in view of Skirmont (US 6,252,848).

Lyon teaches all the limitations of claim 1.

Lyon does not teach probabilistic test based on precedence, priority or volume rate.

Skirmont teaches probabilistic test based on precedence (IP precedence 2:28-34, priority (priority for a preferred user 2:34-41) or volume rate (out of profile flow 2:42-50).

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It would have been obvious to one of ordinary skill in the art at the time the invention was made to add probabilistic test based on precedence, priority or volume rate of Skirmont to the system of Lyon to improve the system performance by adjusting the packets dropping to meet different system requirements.

5. Claims 21 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lyon in view of Bechtolsheim (US 6,515,963).

Lyon teaches all the limitations of the parent claims.

Lyon does not teach a queuing management circuit located between the buffer and the output.

Bechtolsheim teaches a queuing management circuit located between the buffer and the output (Port scheduler 50 on Fig. 1 and 2:27-55).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to add a queuing management circuit located between the buffer and the output of Bechtolsheim to the system of Lyon to improve the system performance when interfacing several output ports.

6. Claims 5, 10, 15, 18 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lyon in view of Ikeda (US 5,719,853).

Regarding claims 10, 18 and 19, Lyon teaches all the limitations of the parent claims, including maximum threshold indicating that the buffer is full (1:34-50) and reducing the speed of transmission when the number of packets in the buffer getting close to the buffer capacity. Lyon does not teach stopping transmission when number of packets in the buffer is greater than second threshold.

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Ikeda teaches stopping transmission when number of packets in the buffer is greater than second threshold (halt the transmission from the source when the queue length is greater than the second threshold 2:20-28).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to add stopping transmission when number of packets in the buffer is greater than second threshold of Ikeda to the system of Lyon to reduce unnecessary packet transmission from the source when the buffer is full.

Regarding claims 5, 10 and 15, Lyon teaches all the limitations of the parent claims, including minimum threshold indicating that the buffer is almost empty (1:34-50) and increasing the speed of transmission when the number of packets in the buffer are low.

Lyon does not teach transmitting at full rate when number of packets in the buffer is less than first threshold.

Ikeda teaches indicating congestion when the when number of packets in the buffer is more than first threshold (2:29-41) resulting in the transmission rate reduction, therefore transmitting at a full rate in the absence of congestion when the number of packets in the buffer is less than first threshold.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to add transmitting at full rate when number of packets in the buffer is less than first threshold of Ikeda to the system of Lyon to utilize full packet transmission rate from the source in the absence of congestion.

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Regarding claim 10, first condition is the dynamic rate when the number of packets in the buffer is between the thresholds (2:1-19) and the second condition is a full rate as disclosed above.

Response to Arguments

7. Applicant's arguments with respect to claims 1, 2, 4-12, 14-22 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

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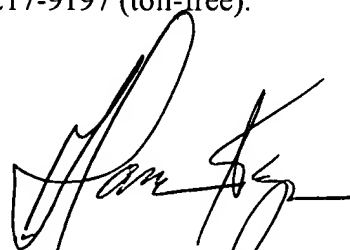
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dmitry Levitan whose telephone number is (571) 272-3093. The examiner can normally be reached on 8:30 to 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou can be reached on (571) 272-3088. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Dmitry Levitan
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03/04/05.



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